Solving Quadratics: Factorising 2

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Examples

Workout

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Question 1: Solve each of the equations below

(a) $(2y - 1)(y - 2) = 0$
(b) $(4x - 3)(x + 1) = 0$
(c) $(2y + 3)(2y - 5) = 0$
(d) $(5m - 4)(m + 2) = 0$
(e) $(h + 9)(3h - 1) = 0$
(f) $(2x - 3)(3x + 7) = 0$
(g) $(7y + 4)(2y + 1) = 0$
(h) $(8w - 5)(w - 11) = 0$
(i) $(5x + 6)(3x - 4) = 0$

Question 2: Solve each of the equations below

(a) $2x^2 + 5x + 2 = 0$
(b) $2x^2 + 7x + 5 = 0$
(c) $5x^2 + 7x + 2 = 0$
(d) $2x^2 + 17x + 36 = 0$
(e) $5x^2 + 23x + 12 = 0$
(f) $3x^2 + 7x + 2 = 0$
(g) $3x^2 + 4x + 1 = 0$
(h) $2x^2 + 7x - 4 = 0$
(i) $2x^2 - x - 6 = 0$
(j) $7x^2 + 23x + 6 = 0$
(k) $3x^2 - x - 2 = 0$
(l) $5x^2 - 16x + 3 = 0$
(m) $3x^2 + x - 4 = 0$
(n) $2x^2 - 13x + 15 = 0$
(o) $7x^2 - 22x + 16 = 0$
(p) $2x^2 + 15x - 38 = 0$
(q) $5x^2 - 31x + 30 = 0$
(r) $3x^2 - 10x - 48 = 0$

Question 3: Solve each of the equations below

(a) $4x^2 + 8x + 3 = 0$
(b) $4x^2 + 12x - 7 = 0$
(c) $4x^2 - 11x + 6 = 0$
(d) $6x^2 + 31x + 5 = 0$
(e) $4x^2 - 16x - 9 = 0$
(f) $8x^2 - 10x - 3 = 0$
(g) $10x^2 - 11x + 1 = 0$
(h) $6x^2 + 31x + 18 = 0$
(i) $9x^2 - 6x - 8 = 0$
(j) $4x^2 - 4x - 35 = 0$
(k) $12x^2 + 25x + 12 = 0$
(l) $14x^2 + 23x - 10 = 0$
(m) $6x^2 + 13x - 5 = 0$
(n) $6x^2 - 11x - 7 = 0$
(o) $16x^2 - 30x + 9 = 0$

Question 4: Solve each of the equations below

(a) $4x^2 - 9 = 0$
(b) $4x^2 - 121 = 0$
(c) $16x^2 - 25 = 0$
(d) $36x^2 - 1 = 0$
(e) $9x^2 - 196 = 0$
(f) $100x^2 - 49 = 0$
(g) $4x^2 - 900 = 0$
(h) $64x^2 - 169 = 0$

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Question 5: Solve each of the equations below

(a) $2x^2 + 5x = 0$ (b) $2x^2 - 9x = 0$ (c) $3x^2 + x = 0$ (d) $4x^2 + 15x = 0$

(e) $5x^2 - x = 0$ (f) $6x + 3x^2 = 0$ (g) $15x - 2x^2 = 0$ (h) $16x^2 - 20x = 0$

Question 6: Solve each of the equations below

(a) $5x^2 - 9x + 6 = 2$ (b) $2m^2 + 6m + 2 = m + 5$ (c) $10x^2 + 26x - 3 = x^2$

(d) $3x^2 + 9x + 8 = x^2 + 2x + 3$ (e) $6y^2 + 4 = 13 - 3y + 4y^2$ (f) $3x^2 + x + 2 = 3(x + 1)$

(g) $(4x + 3)(x + 2) = 3(x + 1)$

Question 7: Solve each of the equations below

(a) $\frac{3}{2x-1} = x - 3$ (b) $\frac{2x-1}{4} = \frac{1}{2x-1}$ (c) $\frac{2}{x^2} + \frac{13}{x} + 6 = 0$

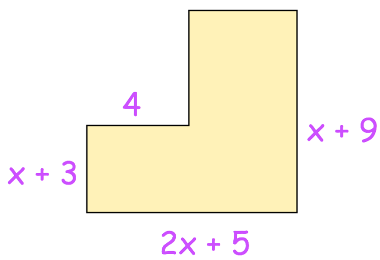
(d) $\frac{3}{x^2} - \frac{5}{x} - 12 = 0$

Apply

Question 1: A rectangular field has a width of x metres.
The length of the field is 25 metres greater than twice the width of the field.
The area of the field is $450m^2$
Work out the length of the field.

Question 2: The nth term of a sequence is $3n^2 - n + 10$ where n is a positive integer.
Which term in the sequence is equal to 54?

Question 3: The area of this shape is $75cm^2$
Find the perimeter of the shape.



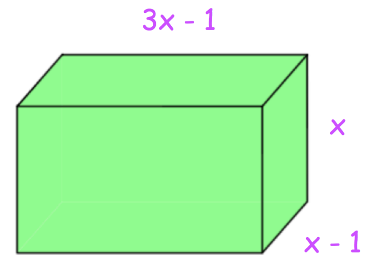
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Question 4: The surface area of this cuboid is $92cm^2$

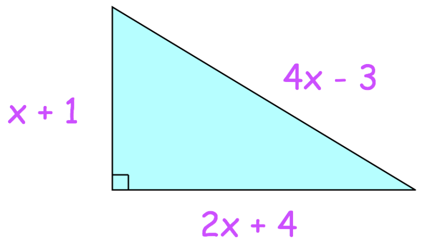
Calculate the volume of the cuboid.



Question 5: Shown is a right angled triangle.

(a) Show that $11x^2 - 42x - 8 = 0$

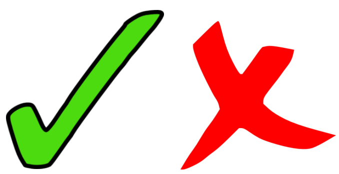
(b) Find the value of x



Question 6: The numbers 2, 3x and (x + 16) are the first three terms of a geometric sequence.

(a) Find the possible values of x
(b) Find the possible values of the 4th term of the geometric sequence.

Answers



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